

REMARKS

At the outset, the Applicant wishes to thank Patent Examiner Bernard Dentz for the many courtesies extended to the undersigned attorney during the Personal Interview on August 6, 2003 at the U.S.P.T.O. The substance of this Interview is set forth in the Examiner Interview Summary, and in this Amendment.

The Specification is being amended to correct a minor typographical error, which relates to the cross reference to related patent applications.

The Patent Examiner has rejected claims 23-43 under 35 U.S.C. 102 as being anticipated by *Yeh* U.S. Patent No. 6,417,376.

The Patent Examiner has rejected claims 23-43 as being unpatentable under 35 U.S.C. 103 over *Yeh*.

Apparently, the Patent Examiner has relied upon the OCTOBER 9, 1998, filing date of the provisional application to apply *Yeh* as a prior art reference. During the Personal Interview, the scope of the *Yeh* provisional patent

application was questioned.

The present invention relates to a process for producing monolithic supported catalysts. Additionally, it is pointed out, that the disclosure of the Yeh US Patent No. 6,417,376 is that of a supported catalyst, wherein the *support is of a mesh-like structure* comprising a plurality of *randomly oriented fibers*. This kind of support is coated by using a coating composition such that the surface tension and viscosity are decreased. The disclosure of Yeh US Patent No. 6,417,376 relates to a different kind of support.

The subject matter of the present invention includes a process for coating *monolithic* supported catalysts. The nature of the claimed support is totally different from the prior art because the monolithic supports have a regular structure of *open or cross-channel structures or honeycomb-structure* (Specification page 7, lines 30 -31). Additional examples of support materials are found on Specification Page 8, lines 33ff.

Therefore, the nature of the support body (irregular mesh-like, fiber-based support of the prior art vs. monolithic structured support of the invention) to be coated is entirely different. This is especially regarding the capillary forces which are not to be considered when coating a mesh-like support. The problem of coating a mesh-like support is the penetration of the "washcoat suspension" by dipping (US 6,417,376, col. 5, lines 43-60). With a monolithic support, the problem of coating is quite different: Due to the capillary forces the penetration of the wash-coat is no problem. The problem is the running out of the suspension from the channels. High capillary forces will hold the washcoat within the channels. Both problems - of totally different nature - can be solved by adding surfactants. Therefore the problem to be solved in US 6,417,376 is of a different nature than the problem to be solved in the present application. Thus a person having ordinary skill in the art would not have considered surfactants as a solution for both problems.

In addition Yeh U.S. Patent No. 6, 417,376 in column 1 in lines 7 to 10 discloses chemical products that are made via selective oxidation. More particularly, it relates to

selective oxidation in the presence of a catalyst which is supported on a mesh-like structure.

Yeh in column 3 in lines 52 to 59 discloses that the supported catalyst particles may be applied to the mesh-like structure by contacting the mesh-like structure with a liquid coating composition (preferably in the form of a coating bath) that includes the particles dispersed in a liquid under conditions such that the coating composition enters or wicks into the mesh-like structure and forms a porous coating on both the interior and exterior portions of the mesh-like structure.

Yeh in column 4 in lines 62 to 65 discloses that the bath may also contain additives such as surfactants, dispersants etc. In general, the weight ratio of additives to particles in the coating bath is from 0.0001 to 0.4 and more preferably from 0.001 to 0.1.

Yeh in column 5 in lines 43 to 60 discloses that in using a coating bath, the coating bath in some cases may include additives. These additives change the physical characteristics of the coating bath, in particular the

viscosity and surface tension such that during dipping penetration of the mesh takes place and a coating can be obtained with a homogeneous distribution on the interior and exterior of the mesh. Sols not only change the physical properties of the coating bath, but also act as binders. After the deposition, the article is dried and calcined.

As representative stabilizing agents there may be mentioned: a polymer like polyacrylic acid, acrylamines, organic quaternary ammonium compounds, or other special mixes which are selected based on the particles. Alternatively an organic solvent can be used for the same purpose. Examples of such solvents are alcohols or liquid paraffins. Control of the pH of the slurry, for example, by addition of HNO_3 is another method of changing the viscosity and surface tension of the coating slurry.

Yeh in column 7 in lines 10 to 25 discloses that it is applicable to a wide variety of processes for catalytic selective oxidation of an organic compound by the use of molecular oxygen. In most cases, the organic compound is a hydrocarbon; for example, an aromatic hydrocarbon or a saturated or unsaturated aliphatic hydrocarbon. As

representative examples, there may be mentioned processes for selectively oxidizing naphthalene and/or o-xylene to phthalic anhydride; benzene, butane and/or butene to maleic anhydride; and aliphatic hydrocarbon to the corresponding epoxy compound, such as an alkene to an alkylene oxide; a primary alcohol to an aldehyde (for example, oxidation of methyl alcohol to form formaldehyde); an alkene or alkane to an aldehyde (for example, propene and/or propane to acrolein); an aldehyde to a carboxylic acid (for example, acrolein to acrylic acid), etc.

Yeh in column 7 in lines 63 to 64 discloses that Vanadium and titanium oxides are the major components of the catalyst.

Yeh in Example 4 in column 10 in lines 29 and 30 discloses adding ammonium phosphate to the bath liquid.

In order to distinguish the claims over the teachings of Yeh, the independent claims 23 and 43 are being amended in order to define the catalyst "RYX" by including the subject matter of dependent claims 25 and 29. The dependency of claim 26 is being revised. Thus claims 23 and 43 are being

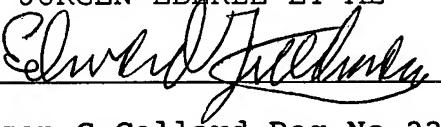
amended and claims 25 and 29 are being canceled. Claim 43 was also amended to recite "monolithic" before "catalyst."

All of the claims now recite specific surfactants not disclosed in the prior art. Also, all the claims recite monolithic catalysts not taught in the prior art.

For all the reasons set forth above, none of the prior art references provides an identified disclosure of the claimed invention. Hence the present invention is not anticipated under 35 U.S.C. 102, but is patentable under 35 U.S.C. 103. A prompt notification of allowability is respectfully requested.

Respectfully submitted,

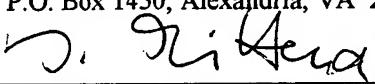
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Enclosure: 1) Two Month Extension of Time /w copy

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as first class mail in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on October 14, 2003.


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